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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,884

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Alan Martyn Eddison

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EXAMINER

GOTTLIEB, ELIZABETH C

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/576,884	<b>Applicant(s)</b> EDDISON ET AL.	
	<b>Examiner</b> Elizabeth C. Gottlieb	<b>Art Unit</b> 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-50 and 80-108 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-50 and 80-108 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/24/2006 and 07/25/2007</u> .                               | 6) <input type="checkbox"/> Other: _____                          |

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## DETAILED ACTION

### *Claim Objections*

1. Claim 88 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 82. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1, 3-10, 14-15, 17-36, 42-43, 50-103 are rejected under 35 U.S.C. 102(b) as being anticipated by Eddison et al. (US Patent No. 6,279,670).**

4. *Regarding claims 1, 50:* Eddison discloses a method and apparatus for running a bore-lining tubing string (**Figure 1, not labeled**) into a bore, the method comprising running a tubing string into a bore while agitating (**Figure 9, via 70**) the string (**column 5, lines 1-6**).

5. *Regarding claims 3-5:* Eddison discloses the agitation of the string at least reduces static friction between the string and the bore wall, reduce gellation of fluid in the bore, and the agitation of the string serves to fluidise sediments lying on the low side of a deviated bore (**The agitator of Eddison will inherently perform these functions**).

6. *Regarding claim 6:* Eddison discloses the tubing string is translated axially (**Eddison discloses a method of drilling and inherently the tubing string is translated axially as the bore is drilled farther**).

7. *Regarding claim 7:* Eddison discloses the tubing string is rotated as it is advanced into the bore (**column 2, lines 5-6**).

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8. *Regarding claims 8, 80-81:* Eddison discloses a drill bit (**Figure 1, 5**) is provided at a leading end of the string.
9. *Regarding claims 9, 82, 88:* Eddison discloses at least a leading end of the string is rotated by a downhole motor (**Figure 8, 72**).
10. *Regarding claim 10:* Eddison discloses the string is rotated from surface (**column 2, lines 5-6**).
11. *Regarding claim 14:* Eddison discloses the string is agitated by operation of an agitator (**Figure 8, 70**) in the string.
12. *Regarding claims 15, 83:* Eddison discloses the string is agitated by operation of an agitator (**Figure 8, 70**) towards a leading end of the string (**as depicted in Figure 8**).
13. *Regarding claims 17, 84:* Eddison discloses the agitator is actuated by fluid (**column 5, lines 25-26**).
14. *Regarding claims 18, 85:* Eddison discloses the agitator is actuated by fluid pumped through the tubing string (**Figure 9 depicts fluid flow arrows within the tubing string**).
15. *Regarding claims 19-20, 86-87:* Eddison discloses the agitator is actuated drilling fluid (**column 5, lines 1-3 disclose the apparatus's use in drilling**). The apparatus of Eddison is inherently capable of being actuated by both drilling fluid and cement slurry as it is fluid actuated and can be actuated by any fluid.
16. *Regarding claims 21:* Eddison discloses the fluid actuates a downhole motor (**Figure 9, 72**).
17. *Regarding claims 22, 89:* Eddison discloses the fluid actuates a downhole positive displacement motor (**column 5, line 9**), whereby the speed of the motor, and thus the rate of agitation, is controlled by varying the fluid flow rate (**column 5, lines 25-33**).
18. *Regarding claims 23-24, 90-91:* Eddison discloses the agitator includes a valve (**Figure 9, 74**) having an element (**80**) that is moved to vary the dimension of a fluid passage (**84, 86**) and the fluid passage dimension controls flow of fluid through at least a portion of the string (**column 5, lines 20-22**).
19. *Regarding claims 25, 92:* Eddison discloses the fluid passage dimension is varied between a larger open area and a smaller open area (**when 80 and 82 are aligned there is a large open area, when they are misaligned, there is a small open area**).

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20. *Regarding claims 26, 93:* Eddison discloses the fluid passage includes a flow passage portion that remains open (**Fluid passage through 84 and 86 always remains open, even when misaligned**).

21. *Regarding claims 27, 94:* Eddison discloses the agitator provides positive pressure pulses in the fluid above the valve and negative pressure pulses in the fluid below the valve (**The device will create positive and negative pulses as claimed as the valve element rotates within the housing**).

22. *Regarding claims 28-29, 95-96:* Eddison discloses the agitator provides pressure pulses which act on a shock tool in the string to axially extend and contract the tool in response to the pressure pulses (**column 5, lines 25-27**) and positive pressure pulses applied to the shock tool (**column 4, lines 47-49**).

23. *Regarding claims 30-31, 97-98:* Eddison discloses wherein the shock tool is provided above and below the agitator (**column 2, lines 24-27**).

24. *Regarding claims 32, 99:* Eddison discloses the agitator comprises a driven valve element (**Figure 9, 80**) which is moved positively to vary the flow passage area (**column 5, lines 20-22**).

25. *Regarding claims 33-34, 100-101:* Eddison discloses the valve element is driven by the rotor (**Figure 9, 78**) of a positive displacement motor (**72**).

26. *Regarding claims 35, 102:* Eddison discloses the rotor provides rotational movement of the element (**column 5, line 21**).

27. *Regarding claims 36, 103:* Eddison discloses the rotor is of a Moniteau principle motor (**column 5, lines 9-10**) and is directly coupled to the valve member (**via ported connector 88**) and provides both rotational and transverse movement to the valve member (**column 6, claims 4 and 5**).

28. *Regarding claim 42:* Eddison discloses comprising producing pressure pulses in the string (**as described in column 4, lines 1-4**).

29. *Regarding claim 43:* Eddison discloses varying the amplitude of the pressure pulses between at least two predetermined amplitudes (**Figure 5 depicts the flow area and thus amplitude of the pressure pulse operates between two extremes**).

30. **Claims 48 and 49 are rejected under 35 U.S.C. 102(b) as being anticipated by Wicks, III et al. (US Patent No. 5,439,290).**

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*Regarding claims 48, 49:* Wicks, III. discloses a method of cementing a bore-lining tubing string in a bore, the method comprising pumping cement into an annulus surrounding the string while applying pressure pulses to the cement (**abstract; column 6, line 10**).

***Claim Rejections - 35 USC § 103***

31. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**32. Claims 11-13, 16, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eddison (US Patent No. 6,279,670).**

33. *Regarding claims 11-13:* Eddison does not expressly disclose in excess of 50, 70, and 85 percent of the weight applied to the string is transferred to the leading end of the string.

At the time of the invention, it would have been obvious to a person having ordinary skill in the art to try the method of Eddison with the claimed percentage of applied weight transfer, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980).

34. *Regarding claim 16:* Eddison does not expressly disclose the string is agitated by operation of a plurality of agitators in the string.

At the time of the invention, it would have been obvious to a person having ordinary skill in the art to try the method of Eddison with a plurality of agitators, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. vs. Bemis Co., 193 USPQ 8.

35. *Regarding claim 41:* Eddison discloses control of percussion frequency by controlling the flow rate (**column 4, lines 61-64**).

Eddison does not expressly disclose varying the agitation frequency of the string between at least two predetermined agitation frequencies.

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At the time of the invention, it would have been obvious to a person having ordinary skill in the art to try the method of Eddison with varying the agitation frequency between any number of agitation frequencies as a matter of design choice based on the desired drilling rate.

**36. Claims 2, 16, 37, 40, 47, 106-108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eddison (US Patent No. 6,279,670) in view of Solum et al. (US Patent No. 3,557,875).**

*37. Regarding claims 2, 16, 37, 40, 47, 106-108:* Eddison does not expressly disclose the tubing string is the last string of bore-lining tubing to be run into the bore (**claim 2**). Eddison does not expressly disclose cementing the tubing string in the bore while agitating the string and agitating the string after the annulus has been filled with cement with a plurality of agitators (**claims 16, 37, 40**). Eddison does not expressly disclose the apparatus is releasable mounted on a separate string within the tubing string (**claims 47, 106-108**).

Solum discloses the tubing string is the last string of bore-lining tubing to be run into the bore (**casing string 14 is production casing; column 2, line 64**). Solum discloses cementing the tubing string in the bore while agitating the string (**column 3, lines 29-32**) and agitating the string after the annulus has been filled with cement (**column 3, lines 42-46**) with a plurality of agitators in the string (**Figure 1 depicts multiple vibrators 25; column 3, lines 11-12**). Solum also discloses the apparatus is run on a separate string (**Figure 1, drill string 17**) and is releasable mounted in the tubing string (**via releasing tool 18**).

At the time of the invention, it would have been obvious to a person having ordinary skill in the art to try the method and apparatus of Eddison, for use in cementing operations, as taught by Solum, to achieve maximum fill and compaction of the cement in the annulus (**Solum; column 1, lines 11-14**).

**38. Claims 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eddison (US Patent No. 6,279,670) in view of Walter (US Patent No. 6,053,261).**

*39. Regarding claims 38-39:* Eddison discloses the flow pulser applies negative pressure pulses below the valve element (and thus to fluid flowing into the annulus) (**as the flow area is restricted, pressure will decrease below the valve element**).

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Eddison does not expressly disclose cementing the tubing string in the bore while applying pressure pulses to the cement as it flows into and through the annulus.

Walter discloses cementing a tubing string in a wellbore while applying pressure pulses **(abstract; column 6, line 10)**.

At the time of the invention, it would have been obvious to a person having ordinary skill in the art to try the method of Eddison, for use in cementing operations, as taught by Walter, to achieve a strong cement bond in the annulus.

**40. Claims 44-45, and 104 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eddison (US Patent No. 6,279,670) in view of Wicks, III et al. (US Patent No. 5,361,830).**

**41. Regarding claims 44-45 and 104:** Eddison does not expressly disclose means utilized to agitate the string is left in the bore following cementation of the string in the bore and drilling through said means and drilling the bore beyond the end of the tubing string.

Wicks, III. discloses a tool for vibration of the casing during cementing **(column 5, lines 46-52; Figure 2)** via pressure pulses (where the tool is left in the hole to be milled **(column 7, lines 7-14)**).

At the time of the invention, it would have been obvious to a person having ordinary skill in the art to try the method and apparatus of Eddison, for use in cementing operations and with the ability to be drilled, as taught by Wicks, III., to achieve a strong cement bond in the annulus and allow for easy removal of the device.

**42. Claims 46 and 105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eddison (US Patent No. 6,279,670) in view of Wicks, III. et al. (US Patent No. 5,361,830) and in further view of Owens et al. (US Patent No. 5,607,017).**

**43. Regarding claims 46 and 105:** Eddison, as modified by Wicks, III., does not expressly disclose said means is at least part soluble and the method further comprises passing an appropriate material into the bore to at least weaken the means and then removing the means from the bore.

Owens discloses a dissolvable well tool **(Figure 1, 16)** dissolvable by a fluid **(18; column 2, lines 44-45)**.



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At the time of the invention, it would have been obvious to a person having ordinary skill in the art to try the method and apparatus of Eddison, as modified by Wicks, III., with a soluble material, as taught by Owens, to achieve easy removal of the tool from the well with circulation of the dissolving fluid.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth C. Gottlieb whose telephone number is (571)270-5566. The examiner can normally be reached on Monday - Thursday, 9am - 3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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